

BRYAN (J.H.)

The Surgical Treatment of Chronic Suppurating Otitis Media.

Read in the Section on Laryngology and Otology, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY J. H. BRYAN, M.D.
WASHINGTON, D.C.

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THE SURGICAL TREATMENT OF CHRONIC SUPPURATING OTITIS MEDIA.

It is not my purpose in this short communication to go extensively into the subject of the management of cases of chronic suppurating otitis media, but only to emphasize a form of treatment that has of late received a decided impetus, and which in many cases offers us the only rational treatment for this obstinate affection, one that is considered so unsatisfactory by many that we, who have these cases to treat, are condoled and sympathized with for being willing to devote so much time in the treatment of affections, the final issue of which is so uncertain.

Much depends upon the seat of the inflammation, whether it is in the epitympanic or in the lower tympanic cavity, they being characterized by somewhat different symptoms. In suppurative inflammations affecting the epitympanic cavity or attic, the perforations are situated in the ~~membrana~~ flaccida or the membrane of Shrapnell, and they are situated either anterior or posterior to the short process of the malleus. Perforations situated in the ~~membrane~~ always mean caries of the ossicles, which may also be associated with caries of the surrounding walls of the middle ear. Owing to the high situation of these perforations, drainage is not readily obtained, and a radical operation here is therefore more frequently called for than in those cases where the inflammation is confined to the lower tympanic cavity, in which case the perforation is generally situated in the anterior or posterior inferior quadrant of the *membrana tensa*, and permits of much freer drainage. While caries is frequently the cause of the prolonged suppuration in this form of abscess, it is not so gen-

erally present as in those cases where the inflammation is confined to the attic. In nearly all cases of prolonged suppuration of the middle ear, the ossicles will generally be found to be in a more or less state of caries. The bonelet most frequently found diseased is the incus, then the malleus, and finally the stapes which has the power of resisting attack longer than the others. With the exception of its head it is rarely affected.

If after giving the patient a fair trial of all the well-known methods of instilling and insufflating antiseptic medicaments into the middle ear the suppuration still continues, then it is our duty to resort to more radical measures which consist in removing the necrotic membrane with its carious ossicles. The aurist must decide for himself when he has exhausted the milder measures before subjecting the patient to an operation. I believe in many cases the sooner it is done the better, as it is our duty to arrest the suppuration in this cavity as soon as possible; by so doing we not only preserve the hearing, but prevent the serious sequelæ of this affection that so frequently result disastrously to the patient's life.

The operation for the removal of the membrana tympani and the ossicles removes all septic material from the middle ear, permits of freer drainage, and enables us to apply the antiseptic lotions directly to the inflamed mucous membrane of this cavity.

The duration of suppuration after the excision of the diseased membrane varies in different cases, but depends to some extent upon the length of time the abscess has existed, and the depth to which the carious process has extended into the surrounding bony walls. In the case I have to report, the discharge ceased at the end of a week, and at the expiration of three weeks after the operation the drum membrane had been almost entirely reproduced; only a small opening remained in the upper part of the membrane about where the short process would be if present.

While in many cases of partial destruction of the

membrane it reproduces itself with great rapidity, still such a rapid redevelopment after total excision as in this case is unusual. The cessation of suppuration can be explained by the fact that caries was limited to the ossicles and the most superficial cells of the attic.

The benefits to be derived from this operation are well illustrated in the report of the following interesting case:

Miss — consulted me Sept. 1, 1894, giving the following history: she stated that her general health has always been excellent until the present time; when about 10 years of age she suffered from an abscess in the left ear, the discharge from which continued for about six months, and when this ceased she was quite deaf. Since that time she has had frequent inflammation in the left ear, accompanied by pain, when she caught cold; but not going into the suppurative stage until the present attack which commenced about August 1 of the present year. At this time she was not in very good general health. This attack began with severe pain in left ear accompanied by nausea and giddiness, but there was no discharge until seen by me September 1, when pus was observed for the first time. On examination, there was found to be a diffuse inflammation of the external auditory canal due to furuncles, with a small quantity of pus exuding from the canal. She complained of intense pain both in the external auditory canal and in the deeper parts of the ear, radiating in front and at the back of the auricle over the mastoid region. There was some swelling in front of the auricle just above the tragus, but there was no pain or tenderness over the mastoid region. The swelling in the external auditory canal was freely lanced and hot fomentations applied. This was not followed by much relief as to the pain which seemed to increase and it was accompanied by nausea, vertigo, double vision and vomiting. Although the swelling in the canal subsided somewhat after the scarification there was

still too much tumefaction in the deeper part of the meatus for the membrana tympani to be visible. The next day, however, after the continuous applications of hot fomentations there was a profuse discharge, followed by great relief as to pain and the other threatening symptoms. With the appearance of the pus secretion the swelling in the canal continued to subside, and a polyp about the size of a large pea was observed blocking up the canal. This was removed with the snare October 5, and it was found to spring from the middle ear, projecting through a perforation in the membrana Shrapnelli, just posterior to the short process of the malleus. The removal of the polyp was followed by a free discharge of thick caseous pus. Two days after the removal of this growth I removed a large cholesteatomatous mass from around the perforation which was pressing against the drum. This was followed by marked relief as to the pressure symptoms which up to this time were still very marked. The membrane was deeply swollen and congested, especially in the region of Shrapnell's membrane in which the perforation was confined.

The secretion of pus continued quite profuse and caseous in character for about a week or ten days after the removal of the polyp, but under the continued use of hydrogen dioxide it gradually diminished in quantity, and became more fluid in character. On mopping out the canal with a cotton-tipped probe, rough bone was detected around the margins of the perforation which had increased somewhat in size since the subsidence of the inflammation. The naked probe failed to reveal any rough bone. After treating the ear locally for six weeks with antiseptic lotions with no material change in the flow of pus, it was deemed advisable to remove the necrotic membrana tympani and the ossicles which were believed to be the seat of the caries.

November 9. Before the patient was sent to the hospital the hearing distance was as follows: watch

heard only on contact, whisper voice not heard, loud isolated words were heard with difficulty at five feet; tuning fork, bone conduction longer and louder than air conduction.

November 15. The patient was admitted to the Garfield Hospital, and on the same day under chloroform anesthesia the necrotic membrane and ossicles were removed according to the usual well recognized method. Owing to the adhesions that had formed between the drum membrane and the walls of the middle ear, and the profuse hemorrhage, its removal was attended with some difficulty. The hemorrhage was finally checked with a 4 per cent. solution of cocaine. There was only a small portion of the incus found, the remainder having disappeared, and the head of the malleus was honeycombed by the carious process. The stapes, as far as could be ascertained, was in good condition and was left in position. After the removal of all diseased tissue from the middle ear, the canal was mopped out with a solution of bichloride of mercury (1 to 6000) and the canal lightly tamponed with sterilized cotton.

November 16. During the night there was considerable pain which passed off toward morning, and also some nausea and vertigo. The discharge during the night was sufficient to necessitate changing the tampon twice.

The ear was cleansed daily, iodoform and boric acid insufflated, and the canal tamponed.

November 21. She was well enough to leave the hospital, and came to my office for treatment. There was very little discharge present, not enough to moisten the tampon. The giddiness still remains, but to a much less degree; complains of a tremulousness and difficulty in getting a deep inspiration. Hearing distance for isolated words, conversational tone, sixteen feet; watch heard at one inch; Galton whistle heard sixteen feet and over.

November 27. No discharge, giddiness has entirely

disappeared. The drum has been reproduced to more than two-thirds of its full extent.

December 5. Owing to a severe cold which the patient contracted, there has been a slight discharge of mucus through the small opening in the membrane, which gradually passed off under the local applications of salicylic acid, gr. xx to alcohol $\frac{3}{4}$ i.

May 8. There has been no return of inflammation and the patient is enjoying comfort with a comparatively serviceable ear; the hearing distance for the watch being two inches, and for the voice, conversation tones, about five feet.

This operation offers many advantages to the patient when the caries is confined to the middle ear cavity and the superficial cells of the attic, but when the trouble is more deeply situated, as in the deeper parts of the attic and antrum, then the more radical operation of Schwartz, Von Stache, or some modification of these must be resorted to.

818 17th Street.



